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ABSTRACT

In an experiment in distance education conducted at the University of Lund, Sweden, students taking a course in educational technology studied at home with the aid of correspondence material. To help the students, telephone instruction with a tutor was provided. Each telephone conversation was recorded as part of the study. Students had positive opinions about the telephone aspect of the course. They knew that their calls were recorded, but this did not affect them negatively. The telephone calls were interpreted using two different methods of content analysis, and it was found that the most common problems for students on home study were of a limited subject-matter nature actualized by the tutor. Practical, organizational, and administrative problems actualized by the students were of secondary importance. (CH)

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THE TELEPHONE USED IN AN EXPERIMENT OF DISTANCE EDUCATION AT UNIVERSITY LEVEL

A PILOT STUDY

RUNE FLINCK

IR 003 279

Project: Two-way communication in correspondenc

TWO-WAY COMMUNICATION IN CORRESPONDENCE EDUCATION

AIM

The aim of the project is to study the importance of two-way communication in correspondence education. The research work is focused on different modes of two-way communication. Three experimental series are carried out:

1 Assignments for submission in correspondence education

2 Correspondence education combined with systematic telephone instruction

3 Correspondence education combined with group meetings.

SOURCE OF FINANCE

The Bank of Sweden Tercentenary Fund

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SUMMARY

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Project: Two-way communication in correspondence education

Source of finance: The Bank of Sweden Tercentenary Fund

The report describes an experiment of distance education at university level on a course in Educational Technology. The students studied at home with the help of correspondence material. In order to help the students to study at home telephone instruction was made available. The student' opinions about the study system are reported.

The main purpose for the research project was to find out a method to interpret the contents of the telephone calls. All calls were recorded and analysed. Two different methods of content analysis were used and the results of the two analyses compared.

Key words: Content analysis, correspondence instruction, telephone instruction, university teaching

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APPENDIX

1. [illegible]

In 1967 the Swedish Division of Statistics appointed a commission - the 1968 Educational Commission (in the following used U 68) - to work out an overall plan for the future post secondary education in Sweden. The main report was presented by the Minister of Education in 1971. Basically U 68 suggested experiments to be arranged with two types of diversification of higher education. The purpose was

(1) to ascertain which types of diversification of higher education could be used as alternatives to possess funds during a two-year period,

(2) to ascertain the fitness of various educational goals for different types of diversification,

(3) to illuminate the educational effect of alternative types of diversification, i.e. student and teacher opinions on the study form,

(4) to ascertain to which way the recruitment to the alternative types of diversification differs from the recruitment to usual study forms, and

(5) to find suitable ways of co-operation between the educational authorities involved.

The experiments were to be carried out under the auspices of the Office of the Chancellor of the Swedish Universities (SAU). They were arranged as three projects. Project 1 concerned experimental departmental university education in different places in Sweden, arranged by the universities themselves. Its purpose was the accommodation to co-operation with local educational authorities and local authorities were supposed to organize study courses, self-contained as regards, and other topics.

Project 2 aimed at experiments with flexible education (open admission) study at home was to be organized by short, delimited periods at centres.

When the experiments were about to start the Riksdag passed on the basis for the activities

[illegible]

[illegible]

[illegible]

of the students participating in these courses are women. The age distribution, however, indicates a divergence from the current distribution. In the experimental group the average age is 34.9 as compared to 28.7 in normal cases. This higher average age is to be expected bearing in mind that the target group supposed to be attracted by distance education was gainfully employed adult students. In our student groups all but one declared that they were gainfully employed: 10 were teachers at different levels, 4 worked as editors in educational companies and 2 as educational advisers, one was a commissioned officer and one a personnel-officer with educational duties at a large company. Consequently, 18 students worked with educational tasks.

17 out of 19 students had leaving certificates from an upper secondary school or an equivalent diploma. Just 2 of the students were enrolled according to the new admission regulations which stated that a person older than 25 and gainfully employed for at least 5 years was permitted to enrol as a student at a Swedish university in a restricted number of departments.

Previous experience of higher education was reported by 14 students. 4 of them had a university degree (B.A. or M.A.). The other 10 had completed studies up to 80 points (equivalent to 2 years of study) in various subjects.

Above all distance education is planned for students living at places where they can not take part in classroom instruction. Before the experimentation started it was discussed if there should be a geographical limitation so that students living in or near the university campus should not be permitted to take part in the course planned for distance education. There was no such decision since it was realized that also other conditions could give reasons for a student to participate in distance education. There are persons with physical handicaps, persons with inconvenient working conditions (like various shift work), persons with small children etc. who have great difficulties to attend regularly

scheduled classroom instruction.

Among the students attending the study course of Educational Technology as distance students 6 were residents in or living within 30 kilometres' distance from the city of Lund. No analysis was made of the reasons why these students chose to participate in distance education. 5 students lived 30-100 kilometres from Lund, while 8 students lived more than 100 kilometres from Lund. As a remarkable fact it should be mentioned that 3 students were Norweigians living in Oslo, Norway.

3.2 Study results

19 students completed the four courses. All but 2 passed all the required examinations within the study period of one year.

In Swedish university education, examinations are graded Fail, Pass, and Credit.

Table 3.2.1 Study result and time for examination

Mark	May 1974	Sept 1974	Σ
Credit	11	2	13
Pass	3	1	4
Not completed	-	-	2
	14	3	

The study results are very satisfactory. 76.4 per cent of the students who completed all the examinations were given the mark Credit. A complete equivalence to the study results from the ordinary on-campus courses is not possible to present. However, both the completion rate and the study results are probably somewhat higher for the group of distant students than for students on campus.

4 THE STUDY GUIDES

The aims of the distance course in Educational Technology was to enable the students to study at home as far as possible. For this purpose six special study guides were produced at the department. They were built up in the following manner:

(1) Introduction: A brief description was given of the sections of the study course. This information was supposed to motivate the student.

(2) Reading instructions: Each study guide offered "consecutive text", interfoliated with references to the current textbooks. The textbooks were not supposed to be read page by page. The reading instructions helped the student to gain a well-structured understanding of the textbooks.

(3) Goal descriptions were given little by little in the consecutive text in the form of "goal boxes". Thus, the goals were not stored up at the beginning of each study guide. The purpose was that the student should all the time have the stated goals near at hand.

(4) Tasks were given continuously to give the students opportunities to put their knowledge into practice. The tasks were composed in such a way that the students had to obtain information on their own outside the textbooks, e.g. through visits to a library, study visits, interviews etc.

(5) Self-checking exercises were worked into the material continuously and were related to the goals.

(6) Assignments for submission completed each study guide. The solutions had to be sent to the department for correction.

To work with study guides of this kind was a first-time experience for the teachers at the department. For this reason it was valuable to test the students' reactions to the study guides to see if the intentions had been attained. Information was collected by means of a simple questionnaire. Some of the results from this will be reported. 18 of the 19 students who completed all the courses answered the questionnaire. One of the questions concerned the goal descriptions. The "goal boxes" previously mentioned contained three levels according to the taxonomy of Bloom, namely knowledge, comprehension, and application (BLOOM et al, 1956). The boxes recurred with short intervals in the study guides.

Table 4.1 "Have the goal descriptions simplified your comprehension of the contents and the demands?"

	Number of students
Yes, to a great extent	2
Yes, to some extent	11
Uncertain	4
No, scarcely	1
No, not at all	0
Σ	18

It is obvious that the purpose of the goal descriptions was not fully attained. Nevertheless, 72 per cent of the students expressed a positive opinion. No correlation with certain relevant background variables as age, sex, former experiences of higher education can be discovered. Their distribution among those is quite at random.

The students were also positive to the reading instructions in the study guides.

Table 4.2 "Do you think that the study guides give a satisfactory comment on the textbooks?"

	Number of students
Yes	16
No	2
Σ	18

The question referred to the last three study units but may represent the others, too. Almost 90 per cent of the students thought that the study guides had succeeded in integrating and commenting on the contents of the textbooks. The two students who answered 'No' did not comment why they gave a negative answer, although they had an opportunity to do so.

Another interesting question was how the students experienced the self-checking exercises which had been prepared for them.

Table 4.3. "Have the self-checking exercises in the study guides facilitated your study work?"

	Number of students
Yes, to a great extent	9
Yes, to some extent	9
Uncertain	0
No, scarcely	0
No, not at all	0
Σ	18

All the students chose one of the two positive alternatives as an answer.

The method used in the experiment was a kind of correspondence instruction in which assignments for submission are naturally an integral part. Besides being a communication aid they intend to test the students' knowledge.

Table 6.6 "Have the assignments for submission been relevant to test your knowledge on the study units?"

	Number of students
Yes, to a great extent	2
Yes, to some extent	13
Uncertain	0
No, scarcely	2
No, not at all	1
Σ	18

The result must be seen as satisfactory since 15 of 18 students (83 per cent) gave a positive answer. Still, 3 students were negative. No connection with relevant background variables can be discovered.

Obviously the composition of the study guides was been satisfactory on the whole. Informal comments from the students to the teachers have indicated that details and individual study units need to be revised. But the principal solution seems to work in its different parts and can be the basis of further work with distance education.

5 [illegible] correction as a way of studying

The questionnaire the students were asked to answer at the end of the study course included some questions intended to shed some light on the way of studying and certain study conditions.

Table 5.1 "My study by correspondence as I have done in this study course seems to me..."

	Number of students
a very good way of studying	12
a rather good way of studying	5
a neither good nor bad way of studying	1
a rather bad way of studying	1
a very bad way of studying	0
I	20

Just one student of the 19 answered in a negative way and one held a neutral position. The remaining students, about 85 per cent, were positive to the way of studying. The two non-positive students did not give any comments on their opinion. For fact that the answers are positive as a whole must be related to the circumstance that the students had themselves chosen the way of studying. However, the attitudes shown express that the students had not been disappointed as to the way in which they had been studying.

Other interesting questions pertain to the existence or non-existence of intensive courses in combination with distance education, and the problem of where these intensive courses should be located - at the university or near the students places of residence.

[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

[illegible]

Table 2.2 [illegible]

	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

Table 6.3.1.1

(A) \ (B)	Yes, absolutely	Yes, to some extent	Uncertain	No, hardly	No, absolutely not	Σ
Very good	5	0	0	0	0	5
Good	2	5	1	1	0	9
Less essential	0	0	2	2	0	4
Quite non-essential	0	0	0	0	0	0
Σ	7	5	3	3	0	18

The result is unambiguous. The students found this possibility to get supplementary instruction by telephone very satisfactory. 77.8 per cent of the students thought it was 'Very good' or 'Good' to get this support, and 85 per cent of them (12 out of 14) also maintained that they had been helped to understand problems dealt with in the assignments for submission. It is worth remarking that none of the students regarded the telephone calls as 'Quite non-essential', 4 students, however, as 'Less essential'.

The four students giving the answer 'Less essential' are distributed at random on the background variables and the number of individual telephone calls exchanged.

6.3.2 Stimulation

The second purpose of the use of the telephone in this experiment was to stimulate and motivate the student in his study work at home. This method of application was not planned in the original experimental plan but the proposal was brought forward in a discussion with the students at the second intensive course in February, 1974. At certain intervals - as a rule every second or third week - the students were called on the telephone. No particular tasks in connection with the study material were the starting-point for these calls.

The following questions were given to the students in the questionnaire concerning these telephone calls:

(C) During the study period your tutor has phoned you now and then just to check up. What is your opinion about this?

(D) Do you think that this type of call should be made more often?

Also for these questions there were check answers as shown in Table 6.3.2.1.

Table 6.3.2.1

(C) \ (D)	Yes, absolutely	Yes	No, just right number	No, can be cancelled	Σ
Very positive	7	2	1	0	10
Positive	2	2	1	0	5
Neither positive nor negative	2	0	1	0	3
Negative	0	0	0	0	0
Very negative	0	0	0	0	0
Σ	11	4	3	0	18

It is obvious that the students were in favour of this activity. 83 per cent (15 out of 18) regarded these telephone calls as 'Very positive' or 'Positive'. No student was negative to them, and 3 students showed a neutral attitude. Besides, most students had the opinion that an activity of this kind should take place more often. Thus, 61 per cent (11 out of 18) took up a clear position when they considered that the type of telephone call should 'absolutely' be extended. No student thought that it should be cancelled.

6.3.3 Resource for the student

The third method of application of the telephone in this experiment was for the students to use it as a resource. By the telephone they could get in touch with their tutor and discuss any problem with him. Thanks to the installation of the automatic telephone answering machine in combination with the recording machine the students could deliver a message on at most 90 sec. anytime a day. Every day the machine was tapped and the tutor then called the students who wanted telephone contact.

The questions given to the students about this activity were the following:

(E) How many times have you phoned the tutor in order to discuss any problem?

(F) Do you think that you have got the help you wanted when you phoned the tutor?

Table 6.3.3.1

(E) \ (F)	Yes, absolutely	Yes, to some extent	Uncertain	No, hardly not	No, absolutely not	Have never phoned	Σ
1 time	1	1	0	0	1	0	3
2 times	0	0	0	2	0	0	2
3-4 times	3	2	0	0	0	0	5
5 or more times	4	0	0	0	0	0	4
Never	0	0	0	0	0	4	4
Σ	8	3	0	2	1	4	18

The majority of the students (77 per cent) reported that they had used the possibility to phone their tutor one or more times. Half the students declared that they had phoned three or more times. It seems obvious that the more times they

phoned, the more positive they were as to the support given. It is worth observing, however, that the students seem to have overrated the number of calls they have initiated. Calculated on the minimum number of telephone calls given by the students in question (E) above (see Table 6.3.3.1), at least 42 calls should have been made. But according to the telephone recording machine just 21 incoming calls were registered. Sometimes, however, the students called the tutor directly either at his office or in his home. These calls are not registered anywhere.

As to the question of using an automatic telephone answering machine and the connected recording machine, the students' opinions were of great interest. One thing was to find out how the students reacted on the fact that the calls were recorded, another which system they preferred - to call an automatic telephone recording machine at any time or to call the tutor directly at fixed hours. 12 out of 18 students preferred to deliver a message to the automatic recording machine and be called back by the tutor later on. The remaining 6 students preferred to call their tutor at fixed hours and get immediate telephone contact.

Most of the students denied that they were annoyed by the fact that the telephone calls were recorded. At the beginning of their studies, they were informed about the recordings and told that the recordings were to be analyzed afterwards. 15 of the 18 students declared that this did not restrain them. The matter was informally discussed with the students after the end of the study course. It was generally stated that thoughts of the calls being recorded often turned up at the beginning of the calls. After a short while, however, this circumstance was forgotten.

6.4 The connection between the number of telephone calls and certain variables

In the light of how the telephone was used in this experimentation it can be of interest to relate the number of telephone calls exchanged between the tutor and the individual student to variables like study results, age, and place of residence.

Table 6.4.1 Study results - number of calls

Study result	Number of calls 4-7	8-12	Σ
Pass	1	3	4
Credit	10	3	13
Σ	11	6	17

The calls have been divided into two groups (4-7 and 8-12) according to the fact that the average number of call per student was 7.37. There is no statistical significant correlation (α = 0,05) between the number of calls and the study results tested by Fisher's exact probability test (p = .092) (SIEGEL, 1956). Nevertheless, the students who were graded Credit made proportionally fewer calls than those who were graded Pass. The number of students in Table 6.4.1 is 17 since 2 students did not pass all the examinations (see Table 3.2.1b.

Table 6.4.2 Age of the students - number of calls

Age	Number of calls 4-7	8-12	Σ
-30	6	3	9
31-	6	4	10
Σ	12	7	19

The grouping of the number of calls has been made as before. The average age amounts to 34.9 when the mean is used as a measure, and 30.5 when the median is calculated. In Table 6.4.2 the median has been used as the basis for dividing the students into two groups. It is not possible to prove a statistically significant correlation (α = 0,05) between the two variables in question (p = .350), still estimated by Fisher's test (see above).

The number of calls in Table 6.4.1 and Table 6.4.2 includes all the calls exchanged, independently of who caused the exchange. If only the number of calls initiated by the students

are counted (number of calls = 21) and the students are grouped into two categories - those who phoned one or more times and those who never phoned at all - the calls are distributed as follows according to the age of the students.

Table 6.4.3 Age of the students - number of calls initiated by the students

Age	Number of student calls 0	1-6	Σ
-30	3	6	9
31-	6	4	10
Σ	9	10	19

It cannot be proved that the age of the students has any correlation ($\alpha = 0,05$) with the fact that the students calls the tutor to get support ($p = .163$). However, numerically more younger than older students got in touch with the tutor by means of the telephone.

It might be of interest to study the relation between the number of calls and the students' place of residence.

Table 6.4.4 Place of residence - number of calls

Living from Lund	Number of calls 0-7	8-12	Σ
< 100 kilometres	9	2	11
> 100 kilometres	3	5	8
Σ	12	7	19

No statistically significant correlation ($\alpha = 0,05$) between the number of calls and the distance of the students' places of residence from the university city can be found ($p = .061$) using Fisher's test (see above). Numerically, students living closer to the university campus make fewer calls, and students living at a greater distance called more often.

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To sum up it should be pointed out that all the three types of telephone contacts were met with very positive attitudes

by this group of students. The telephone calls were approved, and the students maintained that they got help and support from the telephone discussions. The fact that the students were acquainted with the telephone calls being recorded for further analysis did not affect them in a negative direction. The number of calls was found not to correlate with variables like study result, age or distance to the campus.

to know what the conversation were generally about. A summary of this kind will be found in Table 7.3.2.

The categories are those mentioned above. In the column concerning the calls no 26-140 all parts of the 115 calls are considered independently of the dominance of any category in a single call. In the column "Dominant markings" those calls are reported in which at least two of the three parts belong to the same category.

Table 7.3.2 shows that two categories, A4 and B5, are received most of the markings.

Table 7.3.2 Summary of framings of the problem discussed in the telephone calls

	Frequency of markings in calls no 26-140		Dominant markings	Calls no 1-25
Category	Number	Percentage	Number of calls	Number
A1	2	.6		
A2	14	4.1		
A3	31	9.0		12
A4	90	26.0	40	5
A5	40	11.6		
B1	38	11.0	1	
B2	6	1.7		
B3	10	2.9	3	
B4	41	11.9	18	7
B5	73	21.2	1	1
I	345	100.0	63	25

In the A4-situation the tutor actualized a subject-matter problem of a specific, limited nature; in B5 the student actualized a practical, organizational or administrative problem. The high frequency of the category first mentioned (A4) is to be expected bearing in mind that the tutor phoned in connection with the assignments for submission. The practical problems actualized by the students concern questions about time for intensive courses at the department, examination periods, lodging and so on.

As to "Dominant markings" the same category, A4, is found to be most frequent. 63.5 per cent of the calls which have a dominant category concern the situation "The tutor actualizes a subject-matter problem of limited nature" (A4). Another category frequent in this kind of call is B4: "The *student* actualizes a subject-matter problem of limited nature".

A category of special interest is that of B1 - the student actualizing a social-personal problem. If it is correct that the distance student has feelings of isolation, a telephone call could be a suitable way to break this isolation. In the analysis made the B1 category represents 11 per cent of the markings of the 115 calls lasting more than 3 minutes 30 seconds (no 26-140). None of the 25 shorter calls is categorized as a B1-call. If the feeling of isolation was considerable and the telephone as an aid was able to counteract it a higher frequence might be expected. But there could be some weakness in the method of analysis. Perhaps calls or parts of calls marked as category B5 (practical problems actualized by the student) in reality deal with social-personal problems. An answer on a practical matter can be very short but the B5-calls tended to be long. The problems brought up may owe its occurrence to a need of contact. This interpretation is speculative but probably not quite illegitimate. In other sections too, where the content was judged as belonging to a certain category we had a strong subjective impression that the things discussed could be categorized as a "social-personal problem". Not the words but the way they were said gave that impression.

The method described and used for content analysis in this context is relatively simple. It is not particularly time-consuming apart from the preparatory work. First, all the calls must be listened through and the duration of each call must be measured. Then the division into parts can be done. Every part has to be listened through twice to evaluate and judge the main content, and this will be classified after a schedule of categories prepared in advance. Probably it will be necessary to check the judgements by using more than one judge.

7.4 Content analysis according the the proportion-method

In certain respects, the method of analysis described in the preceding passage can be considered rather rough as regards the content classification. When the calls are divided into the same number or parts almost independently of the length of the entire call, the duration of each part varies considerably, which causes certain difficulties. Short parts are easier to clssify than long ones. 25 minutes call divided into three sections yields part of 8.33 minutes. A 12 minutes call divided in the same way yields parts of 4 minutes. The longer each part is, the harder it is to make a fair judgment.

In order to test the accomplised classification a number of the telephone calls were studied with a more detailed method of analysis. 10 per cent of the 140 calls were selected for this analysis. Every tenth call was chosen from a ranking-list containing all the calls arranged according to their duration.

The following procedure was performed. Each call was listened through, and the time was marked for how long the conversation dealt with the different problems listed on the schedule of categories (see p 35). This amounts to a continuous analysis of the course of events during the entire telephone conversation. In order to get a uniform standard of judgment the measured time for each identified category was related to the total length of the calls as follows:

$$\frac{\text{duration of one category}}{\text{duration of the total call}} \times 100.$$

Thus, a section of 90 sec. in a 442 seconds call (= 7 min. 22 sec.) yield 20 units (90/442 x 100), one unit in this case being approximately 4.5 sec. (4.42 sec.). In other words, one "proportional unit" is one per cent of the total length of the call.

The result of the analysis carried out in this way is reported in Table 7.4.1. For the sake of comparison, the table also

Call No	Dura-tion	Student	Tutor	Type	Proportion-method	
					Proportions	Summary
10	2:26	1	B	ASS	12 A4, 10 B1, 58 A4, 20 B5	70 A4, 10 B1, 20 B5
20	3:23	2	B	CHE	10 A1, 40 A3, 15 B4, 35 A3	10 A1, 75 A3, 15 B4
30	4:27	3	A	ASS	12 A4, 16 A5, 46 B4, 26 B5	12 A4, 16 A5, 46 B4,
40	5:07	4	A	CHE	25 A3, 42 A4, 10 B1, 23 B5	25 A3, 42 A4, 10 B1,
50	5:40	5	A	ASS	28 A4, 69 B5, 3 B1	28 A4, 3 B1, 69 B5
60	6:18	1	B	ASS	12 B1, 24 A4, 30 B1, 25 B4, 5 B1	24 A4, 51 B1, 25 B4
70	7:00	2	A	ASS	29 A4, 37 B4, 34 B5	29 A4, 37 B4, 34 B5
80	7:22	6	B	ASS	18 A4, 10 B5, 36 B3, 36 A4	54 A4, 36 B3, 10 B5
90	9:00	7	A	CHE	34 A3, 38 B5, 28 B1	34 A3, 28 B1, 38 B5
100	9:16	5	B	ASS	42 A4, 28 B5, 28 A4, 2 B1	70 A4, 2 B1, 28 B5
110	11:06	8	A	ASS	20 A4, 10 B1, 42 A4, 2 B1, 26 B5	62 A4, 12 B1, 26 B5
120	12:19	1	A	ASK	8 B4, 8 A5, 14 B4, 4 B5, 20 B1, 12 B5, 10 B1, 4 A5, 16 B1, 4 A2	4 A2, 12 A5, 46 B1, 24 B4, 16 B5
130	16:25	1	A	ASK	7 B1, 30 B5, 32 B3, 27 A4, 4 B5	27 A4, 7 B1, 32 B3,
140	25:00	9	B	CHE	17 A3, 7 B4, 6 A3, 54 B4, 10 B5, 6 B4	26 A3, 67 B4, 10 B5

Table 1.4.1 Survey of cells analysed by two different methods

Proportion-method		Part-method	
Proportions	Summary	Parts	Assignment
12 A4, 10 B1, 58 B4, 20 B5	70 B4, 10 B1, 20 B5	A4	A4
10 A1, 40 A3, 15 B4, 35 A3	10 A1, 75 A3, 15 B4	A3	A3
12 A4, 18 A5, 46 B4, 24 B5	12 B4, 18 A5, 46 B4, 24 B5	A4 B4 B5	
25 A3, 42 A4, 10 B1, 23 B5	25 A3, 42 A4, 10 B1, 23 B5	A3 A4 B5	
28 A4, 69 B5, 3 B1	28 A4, 3 B1, 69 B5	A4 B5 B5	B5
12 B1, 24 A4, 30 B1, 25 B4, 9 B1	24 A4, 51 B1, 25 B4	A4 B1 B4	
29 A4, 37 B4, 34 B5	25 A4, 37 B4, 34 B5	A4 B4 B5	
18 A4, 10 B5, 36 B3, 36 A4	54 A4, 36 B3, 10 B5	A4 B3 A4	A4
34 A3, 38 B5, 28 B1	34 A3, 28 B1, 38 B5	A3 B5 B1	
42 A4, 28 B5, 28 A4, 2 B1	70 A4, 2 B1, 28 B5	A4 B5 A4	A4
30 A4, 10 B1, 42 A4, 2 B1, 26 B5	72 A4, 12 B1, 26 B5	A4 A4 B5	A4
8 B4, 8 A5, 14 B4, 4 B5, 20 B1,	4 A2, 15 A5, 46 B1,	B4 B1 B1	B1
12 B5, 10 B1, 4 A5, 18 B1, 4 A2	24 B4, 16 B5		
7 B1, 30 B5, 32 B3, 27 A4, 4 B5	27 A4, 7 B1, 32 B3, 34 B5	B5 B3 A4	
17 A3, 7 B4, 6 A3, 54 B4, 10 B5, 6 B4	28 A3, 67 B4, 10 B5	A3 B4 B4	B4

contains the results from the previous analysis. In the column "Proportions" the various categories are given chronologically measured in "proportion units". In the column "Summary" the units of each category have been summed up. In the column "Type" is noted what type of telephone contact was established.

The types are (cp p 17)

ADS: call initiated by tutor in connection with assignments

CHE: call initiated by tutor in order to check, stimulate, motivate

ASS: call initiated by student to ask for help and support

Each call was opened and concluded with conventional compliments and small talk. In this analysis, those part of the conversation were neglected if the duration of the introductory and concluding passages did not exceed 15 seconds each.

From table 7.6.1 it appears that the two forms of analysis yield mainly the same result. According to the part-method, a category was considered dominant if it was represented by at least 2 parts of 3. Thus, the entire call could be described with the help of this single category. This was the case with calls number 10, 20, 50, 80, 100, 110, 130, and 140. If we study the results of the proportion-method and use the same stipulation, looking for calls in which at least 67 per cent of the measured time is classified as belonging to one category, we find a corresponding evaluation of calls number 10, 20, 50, 100, and 140. Three calls (80, 110, and 130) do not reach the 67 per cent limit for one single category. If on the other hand the limit was reduced to just above 50 per cent, calls number 10, 20, 50, 80, 100, 110, and 140 would be classified as being dominated by one category. Not even then, however, will call number 130 be classified in that way. However, call number 60 fulfils the requirement of a 50 per cent level.

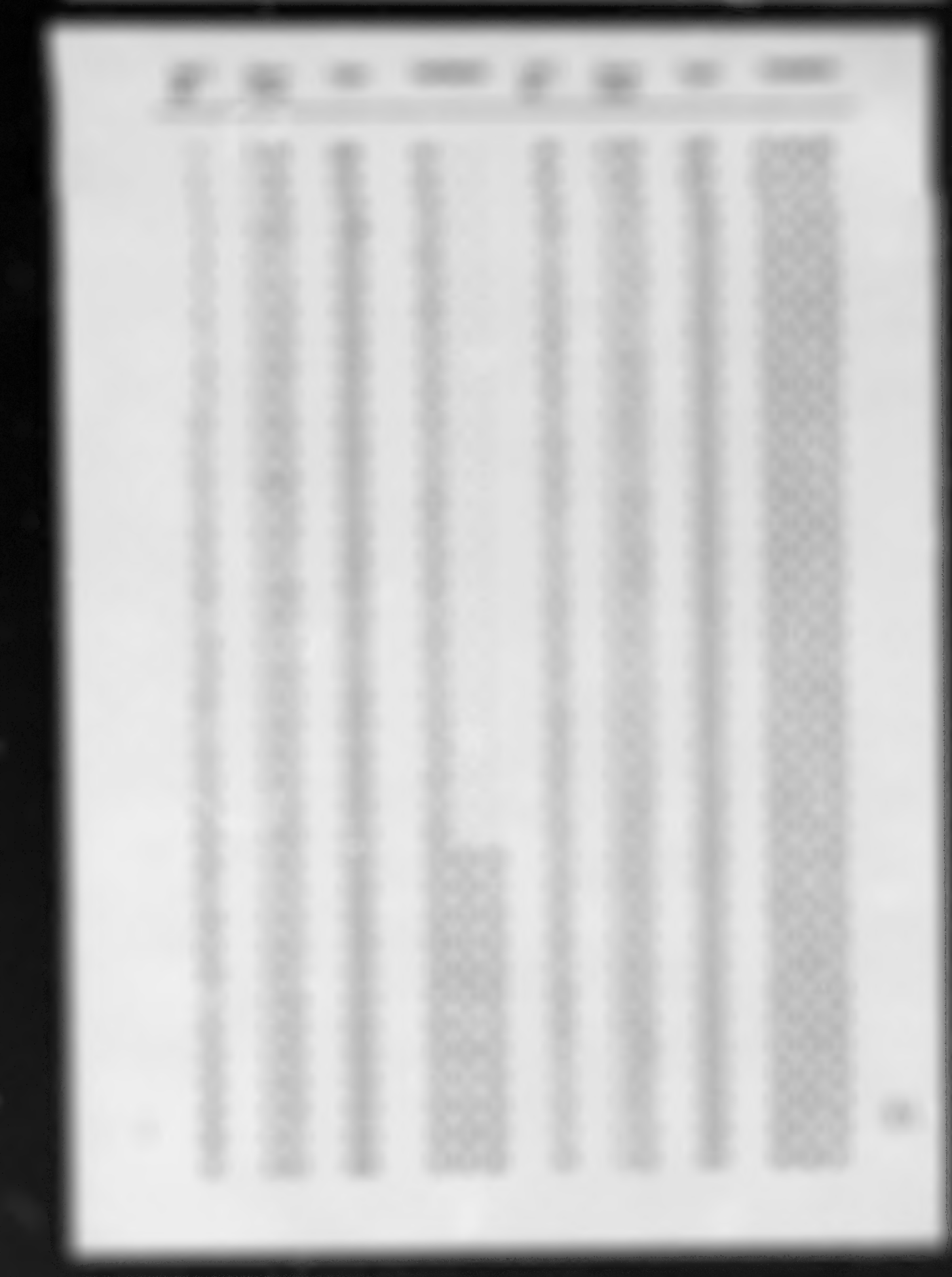
For the sake of surveyability this discussion has been simplified in Table 7.6.2. The two methods show an agreement at

both levels of demand in 19 of 20 cases (fulfilment and non-fulfilment of the demand). If we compare the part-method with the proportion-method on the 67 per cent level we find an agreement in 11 of 20 cases (76.5 per cent). Accordingly there is a rather good correspondence between the two methods.

Table 7.4.2 Comparison between fulfilment levels of demand to decide a decision category

Cell no.	Part-method towards 67 per cent	Proportion - method towards 67 per cent	Proportion - method towards 50 per cent	
10	+	+	+	
20	+	+	+	+ + fulfil the demands
30	+	+	+	
40	+	+	+	+ - do not fulfil the demands
50	+	+	+	
60	+	+	+	
70	+	+	+	
80	+	+	+	
90	+	+	+	
100	+	+	+	
110	+	+	+	
120	+	+	+	
130	+	+	+	
140	+	+	+	

Judged by this simple comparison the two methods will give the same result. It seems reasonable to assume that we will have a more diversified representation of the contents when using the proportion-method. The comparisons made here does not, however, indicate this quite clearly. In addition, the part-method is a labour-saving technique compared with the proportion-method.



Call No	Duration	Type	Contents
75	7:15	ASK	A4 A4 A5
76	7:15	CHE	A5 B5 A3
77	7:20	ASK	A3 B4 B4
78	7:20	ASK	B5 A5 B1
79	7:20	ASS	A4 A4 B5
80	7:22	ASS	A4 B3 A4
81	7:25	ASS	A2 B1 B5
82	7:25	CHE	A3 B5 B1
83	7:20	ASS	A5 A4 A4
84	7:30	ASK	B2 B1 B5
85	8:07	ASS	A4 B5 A4
86	8:28	CHE	B1 A2 B5
87	8:23	ASS	A4 A5 A4
88	8:30	ASS	A4 A4 B1
89	9:00	ASS	A4 A4 B5
90	9:00	CHE	A3 B5 B1
91	9:07	ASS	B2 A2 B5
92	9:08	ASS	A4 B5 A4
93	9:10	CHE	A3 B5 B1
94	9:10	ASS	A4 B5 A4
95	9:12	ASK	B5 B4 B4
96	9:12	CHE	B4 B5 B4
97	9:12	ASS	A4 A4 A5
98	9:15	ASS	A4 B5 A4
99	9:15	CHE	B5 A4 A4
100	9:16	ASS	B4 B5 A4
101	9:20	ASS	A4 A4 A3
102	9:22	ASS	A4 A4 B5
103	9:23	ASS	A2 B5 B1
104	9:35	ASS	A4 A4 A2
105	9:46	CHE	B5 B1 A5
106	9:59	ASS	A4 A5 B5
107	10:02	ASS	A3 B5 B1
108	10:20	ASS	A4 A4 B5
109	10:40	ASS	A5 B5 A3
110	11:06	ASS	A4 A4 A2
111	11:12	ASS	B2 B4 B4
112	11:12	ASS	A4 A5 B5
113	11:18	ASS	B3 A5 B5
114	11:20	ASS	A4 A5 A4
115	11:23	ASS	B5 A3 B1
116	11:25	ASS	A4 B5 A4
117	11:29	CHE	B4 A3 B4
118	11:43	ASS	A5 B4 B5
119	12:00	ASS	A3 B3 B3
120	12:19	ASK	B4 B1 B1
121	12:20	ASS	B2 A5 B5
122	12:25	ASS	B5 B1 B3
123	12:27	ASS	A4 A5 A4
124	12:29	ASS	A3 B4 B4
125	12:50	ASK	B4 B4 B5
126	13:10	ASS	A4 B5 A3
127	13:59	ASS	A3 B5 B1
128	14:28	ASS	A4 B5 A1
129	15:25	ASS	A3 A4 B1
130	16:25	ASK	B5 B3 A4
131	16:29	ASS	A3 B1 B5
132	16:45	ASS	A5 B4 B4
133	17:14	ASS	A3 B1 A5
134	18:50	ASS	A5 B4 B4
135	19:23	ASS	B5 A5 B1
136	22:09	ASS	A3 B4 B4
137	24:00	ASS	B5 A3 B1
138	24:21	ASS	A2 B4 B4
139	25:00	ASS	A5 B1 B5
140	25:00	CHE	A3 B4 B4

ASS: call initiated by tutor in connection with assignments

CHE: call initiated by tutor in order to check, stimulate, motivate

ASK: call initiated by student to ask for help and support

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